DOCUMENT RESUME

ED 287 172 CS 210 832

AUTHOR Flower, Linda
TITLE Interpretive Acts: Cognition and the Construction of Discourse. Occasional Paper No. 1.
INSTITUTION Center for the Study of Writing, Pittsburgh, PA.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO CSW-OP-1
PUB DATE Sep 87
NOTE 22p.
AVAILABLE FROM Center for the Study of Writing, School of Education, University of California, Berkeley, CA 92720 ($3.00, plus sales tax for California residents; make check payable to Regents of U.C.).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Processes; *Discourse Analysis; Metacognition; Problem Solving; *Protocol Analysis; Reader Response; *Reading Processes; *Reading Writing Relationship; Writing Processes; Writing Research; Written Language
IDENTIFIERS Author Text Relationship

ABSTRACT

Noting that the new literary and rhetorical theories are concerned with revealing the constructive nature of productive and interpretive processes, this paper examines the cognitive processes in reading and writing which make them constructive and intentional acts, and how reader and writer "negotiate" meaning in light of context, reader goals, and knowledge of the author's intention. The first part of the paper presents the idea of negotiated meaning and diagrams the relationship between reader and writer and outside forces in such a discourse construction, going on to note some of the implications of seeing reading and writing as acts of cognition. The first subsection discusses cognition and discourse knowledge, while the second subsection examines forces that govern a reader's response. The third subsection discusses goals of the reader, including deriving a suitable paraphrase from a written work, coming away with a meaningful reading, and looking for a meaning which fits with the author's intention. A final subsection on readers' goals and texts concludes the first part of the paper. The second part of the paper analyzes the protocols of two readers as they verbalize while reading an article and "negotiate" the meaning of what they read. Twenty-two references are included. (JC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED287172

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Center for the Study of Writing

Occasional Paper No. 1

INTERPRETIVE ACTS: COGNITION AND THE CONSTRUCTION OF DISCOURSE

Linda Flower

September, 1987

University of California, Berkeley
Carnegie Mellon University

CS 210832

CENTER FOR THE STUDY OF WRITING

Occasional Paper No. 1

INTERPRETIVE ACTS: COGNITION AND THE CONSTRUCTION OF DISCOURSE

Linda Flower

September, 1987

To appear in Poetics 16 (1987)

University of California
Berkeley, CA 94720

Carnegie Mellon University
Pittsburgh, PA 15213

The project presented, or reported herein, was performed pursuant to a grant from the Office of Educational Research and Improvement/Department of Education (OERI/ED) for the Center for the Study of Writing. However, the opinions expressed herein do not necessarily reflect the position or policy of the OERI/ED and no official endorsement by the OERI/ED should be inferred.

CENTER FOR THE STUDY OF WRITING

Director	Sarah Warshauer Freedman University of California, Berkeley	
Co-Directors	Linda Flower Carnegie Mellon University	J.R. Hayes Carnegie Mellon University
	James Gray University of California, Berkeley	
Administrative Director	Sandra Schecter University of California, Berkeley	
Editor	Melanie Sperling University of California, Berkeley	

Publication Review Board

Chair	Melanie Sperling University of California, Berkeley	
Assistant Chairs	Charles Elster University of California, Berkeley	Karen Schriver Carnegie Mellon University
Advisors	Charles Fillmore University of California, Berkeley	Jill H. Larkin Carnegie Mellon University

Carla Asher, *Herbert H. Lehman College of the City University of New York*
Nancie Atwell, *Boothbay Region Elementary School, Boothbay Harbor, ME*
Robert de Beaugrande, *University of Florida*
Ruby Bernstein, *Northgate High School, Walnut Creek, CA*
Wayne Booth, *University of Chicago*
Robert Calfee, *Stanford University*
Michael Cole, *University of California, San Diego*
Colette Daiute, *Harvard University*
John Daly, *University of Texas, Austin*
Peter Elbow, *State University of New York, Stony Brook*
JoAnne T. Eresh, *Writing and Speaking Center, Pittsburgh, PA*
Donald Graves, *University of New Hampshire*
James Hahn, *Fairfield High School, Fairfield , CA*
Julie Jensen, *University of Texas, Austin*
Andrea Lunsford, *Ohio State University*
Marion M. Mohr, *Fairfax County Public Schools, Fairfax County, VA*
Lee Odell, *Rensselaer Polytechnic Institute*
Charles Read, *University of Wisconsin*
Victor Rentel, *Ohio State University*
Michael W. Stubbs, *University of London*
Deborah Tannen, *Georgetown University*
Gordon Wells, *Ontario Institute for Studies in Education*

INTERPRETIVE ACTS:
COGNITION AND THE CONSTRUCTION OF DISCOURSE

By

Linda Flower
Carnegie-Mellon

It is sometimes asserted in current literary theory that the author is dead--and intentionality has been buried with him. To those of us who study writing--the work of would-be authors--this is a rather disconcerting thought. And writers themselves seem to go on as though they had not heard the news. The writers one observes in research on the process of composing appear to be very much alive, actively planning, shaping, and testing their texts on the basis of rich networks of plans and goals; they clearly have intentions, not to mention designs on the reader. And the readers we have observed in the process of reading spend time trying to infer those intentions.

Nevertheless, I think this obituary can be read as good news, because it may force us to overhaul our image of writers and readers. We do not need to banish the writer from the discourse, but we do need to liberate the reader (and even the critic) from the heavy hand of a narrowly conceived "author" (cf. Foucault 1977). Likewise, we clearly need to rethink our currently impoverished image of writers' "intentions" which would reduce the labyrinths of a writer's intentionality to the puny statement of a text's "theme" or gist that one might find in a student's examination script.

I raise this question of intentionality because it would appear to be a source of lively contention: the rhetors/writers lined up against the critics/readers for possession of meaning or the text. However, I think this struggle with intentionality really points to a more interesting goal the two groups share. The new literary and rhetorical theories are both concerned with revealing the constructive nature of productive and interpretive processes. In the very act of discourse--in the rapid play of cognitive processes which unfold in real time as people read and write--readers and writers construct ***an image of a given discourse*** in their own minds. However, when caught in the act of discourse making, these readers and writers do not appear to be free agents, on the one hand, nor mere pawns of their context or conduits of prior knowledge on the other. They appear to be ***constructors*** who mediate (in intriguingly unpredictable ways) the forces which impinge on interpretation and production.

This paper is about the cognitive processes in reading and writing which make them both constructive (and intentional) acts. It is not particularly concerned with what readers (or writers) *should* do, but with what the ones I have studied actually *do* do (and with how I, from a cognitive perspective, can interpret those actions). It is about the ways people negotiate forces (such as the context of reading, their knowledge of the author's intention, and their own goals) as part of the process of production and interpretation. Although this paper will look most closely at interpretation, this research agenda applies to both.

Let me start this discussion with a mental map of the territory such research would track. Cosmology is now out of style, and my conceptual map or model is not really intended to establish an order for the universe, but to throw certain aspects of it into sharp focus. Mental maps like this one tend to be a little fuzzy out at the edges, happy to tolerate ambiguity in the distant territories others know better, in order to focus on the area a given perspective can see best.

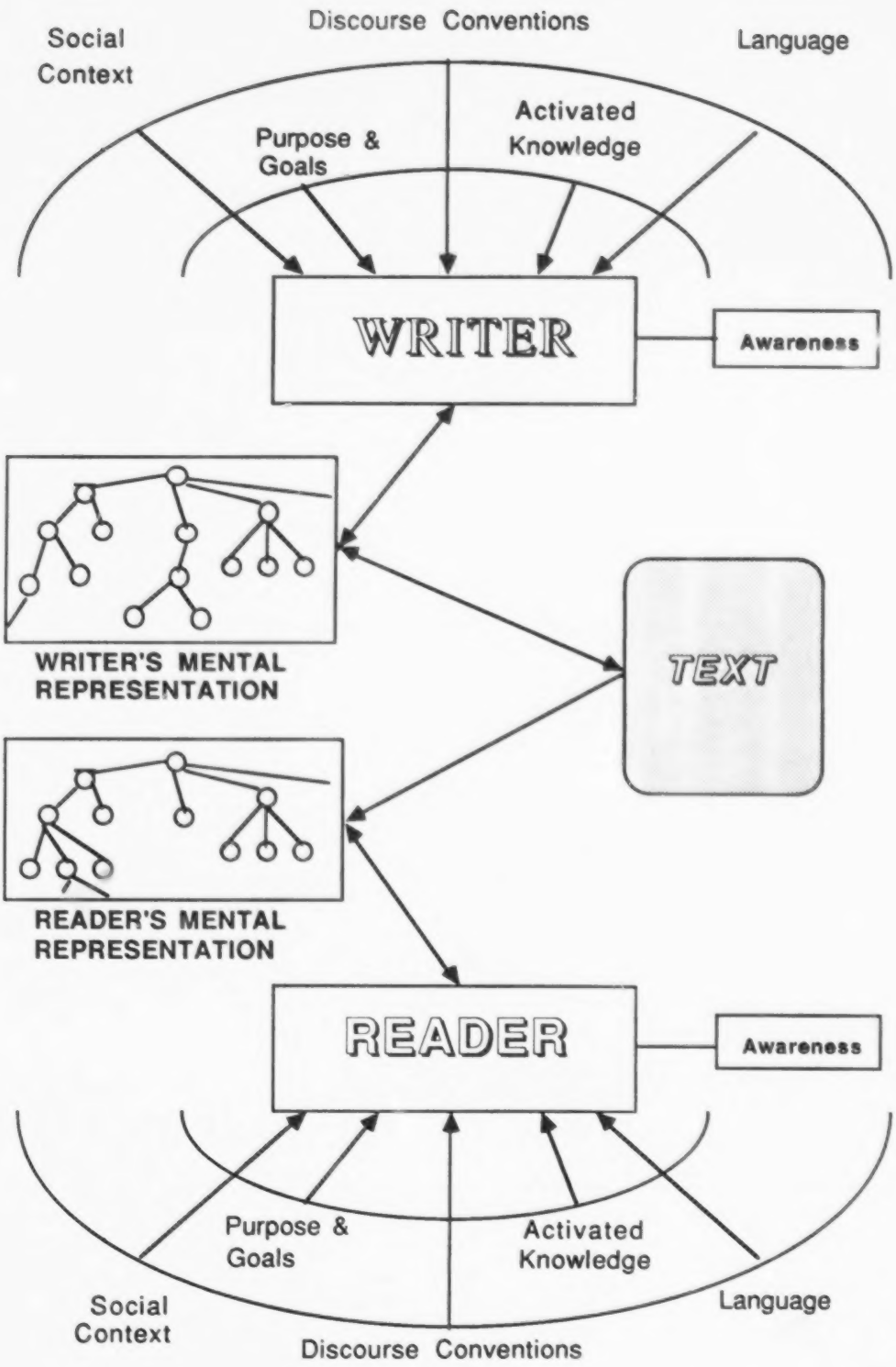

Figure 1 A Conceptual Model for Discourse Construction

In this model, the constructive processes of reader and writer are at the center of the stage. If we take the writer as example, we see an outer circle of external forces, which includes social context and ideology, discourse conventions, language, and so on, which impinge on any given act of writing . These can be distinguished from an inner circle of the *activated* knowledge relevant to this particular act of composition. This separation simply reflects the difference between the information a writer could respond to and that which is actively represented in the writer's mind in a given performance--it is the difference between what you know and what you use at any given moment. Since this inner circle symbolizes the active forces which influence a given act of composing, the writer's purpose or goals also figure as a major element in the scheme.

The key point of this model is that these entities (language, goals, etc.) represent substantial **lines of force** impinging upon the cognition of the writer just as they do upon a reader. Nevertheless, these forces must be negotiatied by the writer/reader to produce a unique text or a unique interpretation. And when the writer revises, or the reader rethinks, these forces may be negotiated differently. What happens, for instance, when a reader's ideology or a set of assumptions come in conflict with equally strong authorial goals. As powerful as these forces are, this cognitive model turns our attention to the **negotation** itself. (Note that this is a conceptual model rather than a well-specified process model of how these elements interact. Its role in life is to point us toward processes we need to understand; to encourage us to look at the phenomenon itself.)

This cognitive model highlights another entity--one which a purely text-based map of discourse would probably ignore. Writers engage in complex cognitive acts. Two hours of active thinking may produce only two lines of text, but this cognitive effort also has its own product: writers develop **a mental representation of meaning** as they work (Flower and Hayes 1981). This representation or network of information contains goals, plans, knowledge--some of it linguistically coded in memory, some of it imagistically coded. All of it is interconnected, whether by loose association or by tight, explicit relations, and usually by multiple lines of connection. The "mental representation" indicated in Figure 1 refers to a memory representation of the sort generally described in cognitive psycholgy in which nodes of information not only form networks, but can participate in the multiple structures people impose upon their knowledge (cf. Anderson 1980; Kintsch and Vipond 1979; Lindsay and Norman 1972). The important point is that this mental representation, which is built and rebuilt throughout the process of planning and writing, is not the same as the text (cf. Flower & Hayes, 1984; Flower et al, 1986; Schmidt 1982: 109-123). It is a private, internal representation of meaning to which we have only indirect access. The **text** is simply one instantiation of that mental network of meaning. That is, it is a concrete instance in prose of a more complex or general mental representation. And on Tuesday the writer may decide that the instantiation she created on Monday wasn't a very good instantiation of her more complex internal representation. And of course, she may also change that internal representation, including her goals, or her plans themselves. This need to instantiate one's own private golden world is what makes writing so difficult.

The reader is doing much the same thing. He reads the text (not the author's meaning or mental representation) and he too constructs a mental representation of meaning--a rich network of language, images and ideas linked in multiple, sometimes contradictory ways. And in this constructive process he too is negotiating information and influences from the world around him (from that external, outer context in the figure), from the inner context of his own activated knowledge and purposes, and from the text. The small box labeled awareness is simply a reminder that he may be quite aware of at least some of this process, able to monitor and modify it, or he may carry it out in blissful ignorance. Blissful ignorance can describe the philosophical stance of readers who assume that they are reading the text objectively, perceiving an unmediated version of the "author's" meaning. Or it may be a limited metacognitive awareness of one's own active cognition. Readers and writers observed in think-aloud studies often wrestle with a text, lost in confusion for moments on end while they carry out an extended series of problem-solving moves, only to emerge at last with a "reading," an idea, or sense of closure and report that they

had no trouble and that it finally just "came to them." Blissful ignorance is, of course, highly functional at times. The trick is being able to rise to both philosophical and metacognitive awarness when one needs to.

Let me note some of the more interesting implications of seeing reading and writing as acts of cognition.

1. Writing and reading are constructive acts carried out by an active cognitive process. Although certain forces , whether they are the social context or the writer's own goals, are important to study in themselves and may exert a great influence on this process, all these forces exist in a delicate, shifting balance with one another, what cultural critics term a situation of overdetermination. More importantly, these forces are *negotiated by the individual* in any given act of composition or interpretation. We can see this process as a mediation, negotation, synthesis, or struggle, and we may lay odds on the domination of the reader, writer, text, or context, but all participate in a complex act of cognition about which we know very little .

2. This view of discourse processes does not speculate on ultimate theories of how things are nor prescribe how things should be. It stands instead as a hypothesis and an agenda for research that calls us to look at the phenomena themselves and at how a variety of real readers and writers carry these processes out. Reading and writing are active processes that take both measurable time and effort. We have observed, for instance, that the strategic processes presented in the model change in response to context, to one's purpose, and to one's age, development and education. But we might be hard pressed to say just how or why this happens. Retrospection, for all its value, has proved to be a fragile tool for research into complex cognitive acts (Ericsson and Simon 1980; Schmidt 1982). For one thing, cognition involves both rational and nonrational processes and many events go on beneath the threshold of awareness leaving only their traces in conscious attention. More importantly, the content of this ever-changing flow of attention is quickly forgotten--attention is pre-empted by the task at hand. These traces and the steady stream of cognition that occupies readers and writers are far more rich and structurally complex than after-the-fact observations make out. Although popular romanticism assigns all the interesting mental effort to the fathomless depths of a creative unconscious (to that "profound sleep" that reportedly composed "Kubla Khan"), it appears that the opposite is often true. Some of the most exciting and important aspects of composing and interpreting are enacted in the rapid choreography of cognition--a process we have only begun to observe.

3. In describing the leap from intention to text (or from text to interpretation), the only certain thing is that the correspondence between the text and internal representations is remarkably uncertain. For one thing, internal representations often take the form of abstract schemas of knowledge people possess or elaborate networks of goals they create. These representations of meaning, by their very nature, allow many possible instantiations, so that radical shifts in language and content may be alternative attempts to capture an initial private meaning. The text is merely the public version of meaning--constrained by the medium of written language--that the writer chose to keep. Furthermore, the writer's trip from intention to instantiation is a perilous one and the final text may bear only a frustratingly familial resemblance to the writer's more complex internal network of meaning. Likewise, when readers normalize a strange text, as they did in Bartlett's classic experiments with a strange American Indian ghost myth, the information they recall is highly selective, distorted, or even completely invented (1932). Reading is such a highly inferential process that, as Bransford's research reveals so elegantly (1979), the representations readers construct may bear a greater resemblance to their expectations, or to the conventions they know, or to the schemas they possess than to the "text" (not to mention the author's intentions). Finally, for good or for ill, readers and writers die; they also forget or rebuild their interpretations and intentions. Texts do live on, but only to be interpreted again. In sum, the act of discourse creates multiple representations of meaning which can not simply be equated with one another (cf.Flower and Hayes 1984).

4. From an educational point of view, the small entity labeled "awareness" is more than a luxury option. We can,of course, influence the process of reading and writing indirectly through assignments , feedback, and grades. But we can often open expand a thinking process most quickly by giving students a window on their own cognitive acts--especially when those acts appear to be highly determined by one force or another. We can help students become aware of their own strategies and we can teach other strategies we value, provided, of course, that we ourselves understand the process we would teach.

5. Finally, it is important to recognize that Figure 1 is not the mental map everyone would draw of discourse processes. A New Critical approach might dismiss attention to the writer's mental representation as an instance of the "intentional fallacy." However, this critique is usually directed at authorial comments and biographical data which are themselves also uncertain guides to the complex cognitive representation suggested in Figure 1. A neo-romantic map of composing would put cognition a long day's journey from the central action--a tangential activity that could not illuminate the unconscious processes presumed to do the lion's share of the work. Likewise, a map drawn from the perspective of cultural theory, might simply place cognition out in the suburbs of irrelevancy, imagining a world where text springs from the tide of social and cultural assumptions, and where language, by an immaculately authorless process, speaks the speaker.

Those maps which would ignore cognitive processes are a response, in part, to an unnecessarily limited definition of cognition--one which equates active problem-solving with neatly rational, well-articulated thought. They also reflect a genuine uncertainty over what role individual cognition really does play in writing and reading. Holding a narrow definition of cognition seems to serve little purpose: it doesn't describe observable behavior, nor does it describe the rich model of mind that underlies recent cognitive process research (see Bransford 1979). Moreover, cognitive and cultural perspectives on discourse can richly complement one another since each operates from the major premise of reading and writing as constructive acts. (For example, the work of Waller and McCormick in this issue reflects an emphasis on the cultural side of this integrated process, while Carnegie Mellon research at the Center for the Study of Writing at Berkeley and Carnegie Mellon emphasizes the way cognition operates within the context of academic reading and writing.) The question of how these aspects of discourse are related is a real one, but our growing understanding of cognition in discourse has helped build a more dynamic theory of reading and writing, in which the individual's active constructive processes play a leading role.

An important test case for an integrated theory is its power to explain how the potentially competing forces of active cognition and prior discourse knowledge operate together. In the next section, I will outline six working hypotheses about how these two forces interact--or how, given our current knowledge, we predict they would interact. The goal of such hypotheses, as I see it, is not only to guide research which could in turn displace or support these claims, but to challenge some assumptions which guide our teaching.

Cognition and Discourse Knowledge: A Case in Point

There are many ways to study discourse knowledge. One is to look at the knowledge itself, that is, to create taxonomies of rhetorical situations based on the modes and aims of discourse (cf. Burke 1950; Kinneavy 1971). Another way is to describe the tropes, paradigms, or genres in which discourse knowledge is typically couched (cf. Corbett 1971; Frye 1957; Bartholomae 1985,) But when we look at cognition and discourse, we must look--since there is no place else to go--at the cognitive processes of individual minds. Discourse knowledge appears to affect (or be used by) this cognitive process in a number of important ways:

1. Much of our discourse knowledge is happily tacit. That is, we are blithely unaware of either our own processes or the knowledge that motivates them.

The debit side of this situation is that we often operate on unquestioned assumptions provided by our discourse community. We write five-paragraph themes, even though the situation calls for critical thinking, because we assume that that is what teachers like to read. We expect a plot or read to find a simply stateable but deep psychological meaning, because novels, as everyone knows, have plots and because that is what we learned to do in high school.

The credit side of tacit knowledge is just as important. It is another way of saying that our years of learning to speak, read, and write are paying off, and many cognitive processes that once took the lion's share of our attention are now automated. Where our limited capacity for attention was once usurped by the task of being grammatical (or spelling the word), by making two sentences parallel, or by managing to sound like PMLA or RTE--now those practiced processes are executed with little effort and our attention can be dedicated to other more pressing matters. People at all levels of experience operate with tacit discourse knowledge--the difference is that experts can simply entrust much more of their supporting processes to the automatic pilot.

2. "Tacit" processes can rise to attention. Some cognitive processes--including many motor and perceptual processes, memory search, and some aspects of language production--operate below the threshold of conscious attention. And they stay there. They are unavailable to introspection and leave only their output, even in protocols of people thinking aloud as they work. Research on such processes must often depend on indirect measures such as reaction times and eye movements. However, many other processes are tacit only until the situation calls for more active processing. For readers and writers there are two important situations which call discourse knowledge and potentially "tacit" processes up into attention.

The first situation is in the act of learning. Most of us have probably forgotten our first college paper, but we may remember learning to write memos, letters of recommendation or grant proposals. As travelers in an unfamiliar discourse community, we spent considerable time and attention analyzing the situation, generating goals and plans, proposing hypotheses about how the beginning should go, and testing, diagnosing, and discarding potential bits of prose. We were actively thinking about the demands of this task and trying out alternative strategies. People typically have limited recall for the delicate structure of plans, goals and decisons they construct during composing--as the differences between the detailed record of a thinking aloud protocol and the more abstract account of a retrospection show us. It is no doubt even harder for us to recreate the experience of our students who are actively engaged in learning the demands of academic discourse or learning how to read in new ways. The strategic knowledge that is now tacit for us (hence too obvious or buried for us to notice) is often the object of cognition for students. It is when we as teachers and theorists find ourselves trying to teach and articulate what we can't recover that process-oriented research rather than theoretical speculation will be most valuable to us.

Our discourse knowledge, fortunately, is not irrevocably buried on the date of our first successful memo. Even with experts, many otherwise automated processes rise to conscious attention under a second circumstance--when the task is difficult. That is why process researchers typically create demanding writing tasks and and give readers challenging texts. In these situations, which can not be handled by well-learned processes, the strategies of both expert and novice demand a portion of conscious attention. We are able to see more of the goals, plans, criteria and alternative strategies our subjects draw on to solve a problem, and to see those portions of their discourse knowledge which are promoted to active consideration. Since cognitive research captures that information which actually makes it to the high rent district of conscious attention, it gives us an indication of how readers and writers set their priorities and manage their own cognition . And it shows us strategies (such as revision, rereading, or hypothesis testing) and information (such as problematic parts of a text or key features of the assignment) which our subject did not actively consider. Discourse knowledge then is not only the sort of information we acquire and use unconsciously, it is at times the object of cognition, at which point it exerts a direct and powerful influence on the writing and reading process.

3. Readers and writers are influenced, not by the sum of what they know, but by that knowledge which is activated in the process of performance. People know a great deal more than they use. The discourse (and topic) knowledge that counts is that which enters into a given rhetorical situation--into a given act of composition or interpretation.

This process of selection and focus begins with imagining the rhetorical problem or task itself. Problem-solvers only solve that version of a problem which they give to themselves as they work. Likewise, individual writers and readers represent the rhetorical situation to themselves. Even if a freshman's internally constructed image of the rhetorical context bears little relation to what I think is the 'real' situation in my class, it is this mental representation of the text, the assignment, the audience, the social situation, or the genre on which the process operates. No matter how powerful the forces which act on discourse, they are negotiated by individual cognition from the very beginning.

As part of the Center for the Study of Writing research at Carnegie-Mellon we are finding that students in even a relatively homogeneous group of freshmen bring sharply different task representations and strategies to a standard college reading-to-write assignment. While some students in this study saw the assignment as a straightforward call to summarize their reading, and others assumed the goal was to demonstrate an interesting response, and still others reached for a synthesis, most students did not recognize that their image of this reading/writing task was in fact a decision in a world with options. One goal of this research is to help students turn the typically covert process of "reading" the rhetorical situation and representing the task to oneself, into the subject of active cognition.

Discourse knowledge is not simply a body of available information; it enters the reader or writer's cognitive process with the status of a goal--in some cases as a very preemptive goal that demands a great deal of conscious attention. Our images of prior texts often function as heuristics, guiding our effort, or as tests that tell us whether to pack it up, pack it in, or keep trying. For example, writing a dissertation usually presents students with the terrible task of achieving credibility and projecting a voice of authority, and at the same time dutifully displaying their homework. Or it throws the writer into the dilemma of following in the footstops of a mentor or a tradition, and yet trying to sound independent of those same voices from the woodwork (cf. Bartholomae 1985). In the process of writing or interpreting, these concerns become active goals which guide memory search and planning ("how shall I present this; what am I looking for"?) as well as diction and sentence structure ("who do I sound like now?"). Furthermore, these goals and unrelenting criteria or tests may come in conflict with other goals (e.g., it is sometimes hard to say what little you do know and still sound like you co-authored with God). Discourse knowledge, then, can not only enter this negotiation as goals, it seems likely that knowledge of a new discourse convention will be most helpful when it is treated as a consciously considered goal--as an agenda we can think about , analyze and argue with, rather than as an intuited test or criteria that rejects our feeble efforts and enters in combat with other goals. Insofar as we expect students to absorb new discourse conventions, whether they are the conventions of an academic analysis, an "honest" personal essay, a new critical reading, or an "interesting" response statement, this process might be easier if it could itself become the object of cognition--an act one could think about. The problem, of course, is that as teachers we don't always know how we do what we do--we just know when someone has done it or not.

Does Anything Govern a Reader's Response?

The preceding section argued that much of the interesting action in interpreting and constructing texts happens in real time in the head of the reader or writer. Even major external forces, such as discourse conventions, are likely to be highly mediated in the act of reading or producing complex texts. I do not, however, want to discount those forces as ***forces.*** In the act of interpretation, the reader does not dance alone. Those impinging "forces" sketched in

Figure 1 are sometimes said to "write" the text. And when one looks at interpretation from a historical, or a cultural , or a linguistic perspective, the most interesting thing about comprehension may be the way these forces shine through . A psychologist, for example, may use a child's recall of a text to trace the structure of the child's knowledge (Langer 1984), while a cultural historian treats the text as an interpretative reflection of ideology. When , however, one tries to look at this cognitive process as an act in motion, one's goal is not to explicate those "forces" as it is in other scholarship, but to account for the process by which they are mediated in the act of interpretation and response. If we focus now on reading, this raises two questions:

1. How does this thinking process work? What do readers do?

2. How do these "forces" impinge on or influence the act of mediation?

Stated that way these questions look like an innocent call for description. However, in their more controversial form these questions might read: If it is true that all our knowledge of a text is mediated knowledge--a construction of our own making--then what power outside of us contributes to, accounts for, predicts, influences, drives, or (in the strongest scenario) determines our "reading"? Does anything? Can we look at a text, at a context for reading, or at a given reader or community of readers and assert what governs (or should govern) interpretation? There appear to be various hypotheses about this.

One hypothesis would be that the outcome of an interpretative act is essentially a random event. Who knows what six readers will create out of *Tom Jones*? For some, this possibility threatens to open the flood gates of raging subjectivism; for others it offers the delights of a flirtation with anarchy.

A second familiar hypothesis is more loaded . It runs: random interpretation no doubt occurs among the masses of the reading world, but an *interesting* interpretation, a *powerful* interpretation, or a *valued* interpretation (at least by our lights), is one which is guided by --and then one fills in one's favorite force (or forces). An interesting interpretation will thus be one that recognizes or emphasizes such matters as: the imagistic structure of the text; its sources and analogues; the biographically perceived intentions of the author; the ideology the text unwittingly reflects; or its relation to some other theoretical system such as Christianity, Marxism, structuralism, or deconstruction, or to the reader's psychic needs, and so on. If the text is expository, the list of valued/interesting forces a good interpretation would observe tends to include the underlying propositional structure or text base, the topical structure and its development in text, the scripts and schemas of discourse, and finally, the reader's goals.

For researchers and critics alike, this hypothesis seems to be an attractive and necessary evil. In attempting to describe one or two of the forces or features which shape an interpretation, this focus represents what most of us have time and world enough to do, if we were really to do justice to our vision. We can caricature our action by saying we select a favorite force or cluster of forces from those suggested in Figure 1 and honor it as "the force which will govern interesting interpretations"; and yet it is hard to do more. It is hard to accommodate the more complex reality we may perceive. Soon this action leads to wars among the champions of the various forces, since the normative issue of "interesting" is so important here. Yet from an educational point of view, this value judgment is vital. We want to teach ways of reading, of interpreting and comprehending, that are worth all those years people seem to spend learning them.

When we cast our gaze back on the process itself, this second normative hypothesis doesn't adaquetely answer the question: it doesn't let us account for what readers actually do. If the process isn't random , is it perhaps so overdetermined, so subject to multiple causes, that there is nothing to say, nothing to predict? We can only watch and admire the diversity?

A third hypothesis would suggest that we can account for the role of these forces on the reader, but to do so we must trade in the comfortable metaphors of direct cause and effect and live with mere probabalistic relations . When looking at readers, the interesting force in any given case will be the one which accounts for most of the data and for the significant differences between readers. For example, consider the following somewhat revised version of a story by Stanley Fish: Fish has written a list of linguist's names on the blackboard for his linguistics class (1980). The next class on 17th century poetry comes in and tries valiantly to interpret this list as a poem. Fish is so delighted he leaves the whole thing on the board for the next class. That class is full of mathematicians who interpret the entire discourse as irrelevant information. We now have a set of 60 individual interpretations which we could label as List1-List20; Poem1-Poem20; and Irrelevant1-Irrelevant 20. Can we account for the variations? That is, can we isolate a force that would reduce this teeming field of 60 interpretations to a smaller number of clusters?

It seems that the dominant force in this example is the context of reading, since it reduces 60 entities to 2 interpretations--to those which see a meaningful text and those which ignore irrelevant information. Now, if we exclude the Irrelevant readings and analyze that community of 40 "meaningful" interpretations, we find the the most interesting force--the one which can account for the bulk of the variation--appears to be something like genre or the clues which prompted people to invoke their genre knowledge. Readers List1-20 know a list when they see one and that unites their interpretations. Furthermore, a handful of students , Poem1-6, in the poetry class thought the whole discussion about the poem was silly, because they too invoked their list schema and like List1-20 came up with the "list of names" interpretation. Poem7-16 tried to make this discourse into poem because this was obviously a poetry class, while Poem17-20 were simply off the wall again marching to their own melodies.

The alternative readings of this discourse reflect the ways features of this text invoked different aspects of each reader's repertoire, as Waller and McCormick describe in this issue. Our readers' responses,then, are not determined by genre features--genre is only one force operating on interpretation. However, it is the force which best accounts for the interesting variation in readings. (Note, we could point to the English language as the dominant force in interpretation, given the fact that these statements are all in English, but since the story is set in a Yale classroom, this is not a particularly surprising or interesting observation; nor can it account for variation.) By reducing 40 interpretations to 5 (i.e., 5 clusters), the genre knowledge readers bring to interpretation accounts for the lion's share of the variance among interpretations. The knowledge of genre conventions let us account for both the 26 list readings and the 10 poem readings--though it was not a good explanation for the remaining 4. When our teeming field shrinks to 5 clusters (the 4 idiosyncratic readings and the genre cluster), and when one force can account at some level for 34 of the 40 interpretations on that distribution, we can feel reasonably certain that it is a dominant force in this interpretive community. We have made a probabilistic statement about how text and context drive interpretation among real readers. We have not described our ideal reader nor have we been pushed into accepting random variation as a meaningful outcome.

Suppose we then went to the poetry seers, that community of 10, and found that although certain parallels to techniques of Andrew Marvell could let us cluster 3 of the interpretations, that force simply isn't dominant enough to account for much. If we were doing this analysis statistically, we would have to say at this point that parallels to Marvell create an intriguing influence on the interpretations of some readers--and maybe those readers were even the best students in the class--but that fact does not rise to "significance." That is, it doesn't account for enough of the data to be a highly probable force.

What does this probabilistic hypothesis buy us and what does it have to do with cognition? It says that whenever information is mediated by an active, interpretative mind, an enormous range of interpretations/representations open up. However, in any given situation there are often certain forces--whether it is the structure of the text, the underlying ideology, or the reader's goals--that

can account far better than anything else for the variability in this distribution. But it takes a metaphor of probability --a statistical concept--rather than a normative conception of what a text should do, or an image of direct cause and effect to account for how readers actually perform.

Now at this point, one might well say, yes, this hypothesis does let us talk in a non-normative, more descriptive way about how those forces are mediated by readers "in general, " but I'm interested in the three who saw parallels to Marvell, because that's a more sophisticated thing to be able to do. Or one might say that simply tabulating what readers do do, is not particularly exciting unless you use it to go beyond the mere event, to a description of dominant variables or a theory of how the process itself operates. Both of those questions lead us back to cognition--to the mediating power of the individual reader, who may or may not share her response with a significant community .

The Goals of Interpretation

In the next section of this paper, I want to look at a particular force--one of the many on Figure 1--that appears to play a dominant role in interpretation: the goals of the reader. It is only when one looks seriously at cognition and individual readers that such goals seem important. Perhaps that is why this influence on reading has been little discussed. Nevertheless, I think it is often responsible for some of the most hotly debated variations in reading theory. Consider these familiar goals:

1. The Paraphrase Goal: Find a statable, stable, single meaning--something you can state in a gist or define in a five page paper. In literature, no one is particularly interested in such interpretations, except people who have to write them down for class or students who assume that this is the name of the academic game. With expository texts, it is a poor substitute for fuller comprehension in which the reader builds a complex network of ideas. However, in both cases this goal has many uses and the reader who can not create gists along the way will probably have difficulty with the larger goals of reading (cf. McCormick, this issue).

2. The Goal of a "Meaningful" Reading. This goal (which we tend to value more highly) aspires to create a more complex network of ideas and relationships than that which can be compressed into a one-dimensional paraphrase. For some readers this goal appears to be satisfied when they can connect individual parts of the the text to their own experience or prior knowledge. Their representation of the "text" would look like a map of an archipelago of loosely linked islands of coherence in which most of the the bridges lead out to the reader's prior knowledge rather than "across" the text. Texts which stimulate our imagination or provide a springboard into our own work are often read this way.

In its most elementary form , therefore, this goal of finding a "meaning" demands no more than a partially integrated representation. The principle of integration one uses to impose coherence may be quite different from that which organizes the text (e.g., as it is when social historians examine childrens' stories for cultural assumptions about sexuality or when their children search torrid romances for practical "how-to" information). Furthermore, the links that form this network may be associative, logical, or imagistic. And the amount of the text that this "meaningful" network encompasses appears to vary greatly from reader to reader, from piecemeal associative responses to highly interconnected, explicitly linked representations of the major elements of the text. Each kind of representation serves different purposes for the reader.

3. The Goal of Relevance to the Author's Representation. Under some circumstances readers place an additional constraint upon the goal of making meaning. They ask that their representation have the added property of being a "good fit" to the representation the author appears to hold. This is a problematic goal since no one has direct access to the author's complex mental representation. Interviewing the author may give us a paraphrase or additional evidence,

which are themselves texts to be interpreted. But they don't give us the real goods which would be a full sense of the goals, ideas, associations and emphases this text had for the writer in his or her own time and place. Actually recovering the author's meaning in its cognitive sense would mean carrying out a kind of interpretive archeology--reconstructing a complex act of discourse. Note that a mere statement of a theme or "main points" would satisfy Goal 1, but not this demand for a more complex representation that would--if it could--approximate the author's own internal representation.

When we try to construct a meaningful network which also achieves a multiple-dimensional "fit" to the author's (e.g., to the author's the top-level structure, logical or imagistic links, associations and assumptions etc.) we must necessarily resort to a great deal of inference and circumstantial evidence. There are no guarantees in this enterprise. And some attempts clearly fail; some readers miss even the main points even when they're trying. Readers with this goal must simply aim for the best fit they can muster under the circumstances. If the author's initial representation was "diffuse, incomplete, and internally contradictory" (Eagleton 1983:74), so be it. The reader aiming for a good fit is a kind of intellectual bookmaker--checking the odds that his interpretation will be accurate because he thinks it matters.

Notice that the issue here is not validity . One does not have to assume that there is an unravished bride of organic unity or a "right reading" waiting to be discovered. This sort of reading, as a mental construction, is no more *valid* than any other, even though it is valued. Its defining property is *relevance* to the author's intended network of meaning. As we move away from the discourse community in which the text was written, we have to resort more and more to careful reading and external evidence in order to increase our probability of producing a good or even probable fit. We have to be willing to test and reject some hypotheses that may be highly interesting (and do an excellent job of "meaning making"--one of our other goals) but which fail the test of relevance (to the author's representation as we imagine it).

In reading a psychology text or Stephen J. Gould's latest article in *Natural History*, this attempt to build an authorially relevant structure is standard operating procedure. One's goal is to learn or comprehend in the standard sense of the term. However, even supposedly informative texts can be turned to our own quite different purposes. The action is located in the interaction of reader and text, not in the text or the context alone. With literary texts this attempt to construct a good fit is a goal we value highly at times. It is an interpretive process, often identified with the goals of a liberal education, which allows us to try on (as best we can) the perspective of another mind and another time. And it appears to offer a good foundation for subsequently trying out other intellectual and emotional responses--for bringing our own goals to bear and *doing other things* with texts. That is, most people who do *interesting* alternative readings have often done an authorially relevant reading first, or have the knowledge and training to do so.

If this claim is true--that reading is a cognitive act guided by the goals of interpretation--the question we might want to answer does not involve the metaphysics of whether any given kind of reading "can" be done. The fact is that people constantly *do* various kinds of reading. They spend considerable time and mental energy constructing and evaluating their complex representations. From a cognitive perspective the compelling research question becomes, how do they do it; how do they meet their goals? And do some readers possess strategies for these sophisticated interpretative processes that a sophomore reader trying to cudgel a paraphrase out of a text might find surprising, liberating or powerful?

If individual readers do in fact select and alter their own goals , one might predict that

• inexperienced readers might represent the goals of reading to themselves in some startlingly divergent ways (from each other and from experienced readers);

• given sophisticated goals, readers may or may not have strategies for reaching those goals; and finally,

• experience or education might make a difference in the goals and strategies in a reader's repertoire.

Readers' Goals and Readers' Texts

Let me conclude with a brief demonstration of how readers' goals can translate into active cognition and interpretive strategies. In a recent study of the inferences people draw during reading, I had asked a number of people to read an essay by Stephen J. Gould arguing for both the importance and radical implications of Darwin's legacy (Flower in prep., Gould 1977). These readers were asked to think aloud as they read--that is, we tried to capture those points at which reading was no longer automatic and people were rising to conscious processing to draw inferences or think about the text. In addition, at key points in the text, they were prompted with the questions, "How do you interpret the text now?" and "Do you have any predictions at this point?" They were also given comprehension questions at the end.

During this study, I noticed that a number of these experienced, adult readers had a large repertoire of strategies for building what I will call an Author's Main Point reading (i.e., a reading, motivated by goal 3, imputed to the author, and focused on key points which the readers either found in the text or inferred from it based on their knowledge of the author) . In creating this reading, they rehearsed all the numbered points found in the text and built mental outlines; they tested themselves to see if they got it; they complained when an example promised by the author didn't really seem to support its point; and when they were asked questions at the end, they responded with comments such as, "Well, that's why I memorized it all. Or tried to..." Figure 2 shows the Author's Main Points as one reader represented them to himself during reading. On the other hand, this Main Point representation was not particularly stable--despite their effort, readers forgot points they were trying to recall (e.g., "I think I'm making up that third point") and they often rewrote and reorganized the ones they did recall.

READER 1	READER 2	READER 3
AN AUTHOR'S MAIN POINT READING	RHETORICAL READINGS	
Key Points Darwin seems difficult. But the logic is simple. Violates 3 assumptions by claiming: • no purpose behind evolution • no direction • materialistic bias Offers a realistic moral view	The Debate Reading	The Radical Reading

Figure 2 Three Readings of the Gould Text on Darwin

The Author's Main Point reading that these readers constructed had some distinctive features. It was clearly signposted in the text, and readers appeared to agree on it at the time of reading. This reading could also be "incorrect" (in the way other sorts of interpretations could not). For instance, one reader in this study incorrectly assumed that Gould was criticizing Darwin for violating Western cultural assumptions, when in fact (in the overwhelmingly consensual reading) Gould was celebrating this radical undercurrent. This particular reader found much of the text confusing.

A well-supported Main Point reading of this text let readers create a coherent network linking all the main points and much of the information in the text with multiple, logical links.

(Other readings seemed typically to account for less of the total information.) This Main Point reading was quite sensitive to the author's apparent purpose: it built a structured set of ideas, devoted to answering a question in intellecual history and to helping us interpret Darwin. This reading also served other purposes for the readers: it was very useful for answering recall questions at the end and it helped people learn something new from a writer most found interesting.

The Author's Main Point reading was, however, not the only game in town. Reader #2 constructed a Rhetorical reading which went well beyond the statements in the text (Flower, in prep.). A rhetorical reading, as I have defined it, is a set of inferences the reader draws which interpret the text by turning it into an act of discourse which includes but goes beyond the information contained in the text. In creating a rhetorical reading, the reader often contstructs scenarios in which readers and writers interact, observe, and have designs on one another. In a subsequent study Christine Haas and I have found rhetorical reading to be an expert strategy (which novices appear not to use) that is related to the expert's ability to find claims in the text (Haas and Flower in prep.).

This particular instance of Rhetorical reading, which I dubbed the "debate reading," involved a number of actors, including Gould, Darwin and the reader. It appears to get underway with a response to the first line of the text (in italics), which the Reader #2 reads then says:

> *One hundred years without Darwin are enough," grumbled the noted American geneticist H. J. Muller in 1959.* A--cliche opener beginning with someone else's words. Pretending that someone is there. Talking, in this case, grumbling, and so citing the noted American geneticist--name dropping--four name droppings, American, geneticist, and his official name, H. J. Muller, and the date. So all documented. Yet, it's really an opinion. Catchy opener. [Looking at the next sentence which begins, *"The remark struck many listeners as a singularly inauspicious way to greeet the Centenary of the Origin of Species,..."* the reader continues:] A--imaginary reader comes next.

In constructing this imagined rhetorical situation, Reader #2 creates an author who is using the tricks of his trade to turn an opinion into a documented fact. Off and on during the next 20 minutes Reader #2 stops to draw inferences about who is speaking for whom and to whom. For instance, at one point the text says that "variation is random rather than preferential." Instead of simply remembering the point (as in a Main Point reading), Reader #2 engages in two extended attempts to figure out how this fits in the debate he is constructing: "I mean,[he says] who said that it's preferential....? I didn't say it, and he [Gould] didn't say it, and I don't know that Darwin said it."

By the time Reader #2 reaches the middle of the text, he has constructed a debate that spans three centuries, that involves Gould, Darwin, the skeptical Reader #2, and three centuries of thinkers . Near the end of the text Reader #2 gives us an umprompted summation of this vision of the text. He reads:

> *[Darwin] didn't care to fob off upon nature all the deep prejudices of Western thought. Indeed, I suggest that the true Darwin spirit might salvage our depleted world by denying a favorite theme of Western arrogance, that we were meant to have control over the earth and its life because we are the loftiest product of a pre-ordained process.*

Reader #2 then responds:

> Now we've gone back,... humm, from Gould arguing with the 19th century to Gould arguing with the 18th century. This is one version of evolution, but here it is... I don't know whether this is a conclusion or Gould is sort of gathering his forces for grand statements, or what, but things are now being labelled exciting, instructing, or uplifting. And we've gone from the lack of sense of purpose and direction proven by --alleged by Darwin, to a kind of anthropocentric discovery and assertion of those values. Now, *In the true,* what Gould is calling the true Darwin experience. So we've got Gould as Darwin's second bulldog or bullpup, apparently Huxley didn't do so well, so Gould is helping him out.
>
> [Here the reader turns the page to find a card that asks if he has any predictions and he continues,] Ok, I don't know where this one is likely to go next. I would have quit reading some time ago. But here we are. Maybe the sermon will continue. We're really in the moral sphere now.

The unprompted summation given by Reader #2 includes a number of the Main Points found in the prompted summation Reader #l gave at this point, However, Reader #2's Rhetorical reading goes well beyond this to envision the text as an argument that builds to the discovery of anthropocentrism (demolishing assumptions from the benighted 18th century) and culminates in a sermon about the value of the true Darwinian experience (for those Victorians among us who have yet to see the light). Readers # 1 and 2 would seem to be walking away with different texts although both were frequent readers and fans of Gould's work.

Rhetorical reading, of course, opens up the door for many interpretations. We can compare this Debate reading to the Radical reading created by Reader #3. Reader #3 started by energetically working away at an Author's Main Point reading until Sentence 24, when something suddenly caught her attention--and reminded her that she had lost her grip on the big question:

> "Now what I've done, is I've lost track of the-a- sort of - highest level - point of this - this article, which is why [there is] the difficulty in accepting Darwin's theory, because I've been trying so hard to remember what the damn theory was. Ok. What I - I can't wait to hear about the radical philosophical content. . . . Good. . . . Oh. I'm really - I love this."

Reader # 3 then goes on to construct a Radical reading which implicitly replaces Gould's organizing idea ("Darwin is misunderstood") with a somewhat different idea ("Darwin is good because he is radical").

It should come as no surprise to us that Readers #2 and 3 created different "mental texts" from the same words. As the Radical Reader put it on her recall test, "Well, I just said [those points] because I will never remember anything else, except - well, what "variation" is. . . . See I'm more interested in the philosophical conclusions, why was, why it was difficult for - for Western culture to accept his ideas, because it challenged the philosphical assumptions of the culture." The text she remembered was the Radical reading she had constructed in light of her values and interests. Of course it is possible that her Radical representation was a close fit to some of the private mental representations Gould too had of this information (cf. Figure 1). But to develop strong inferences about that we might want better evidence, such as think-aloud data on Gould's actual thinking process during the writing of the piece.

A more revealing feature of this data, which this discussion deliberately obscured, is that Reader # 1 and Reader #2 are in fact the same person. The summation which I dubbed as the Debate reading came as an unprompted attempt to make sense of what Reader #2 had just read--to make the pieces fit together. These unprompted inferences and attempts at consolidation were a major feature of interpretive processes one sees in this data.

The Main Point summation I attributed to Reader #1 actually came on the heels of the Debate summation, when a prompt asked the reader to say how he interpreted the text now. This reader appears to have been building (at least) two, overlapping but independent representations of this text. He apparently decided that the prompt question called for his Main Point representation. The final oddity is that his closing outline of the Main Points revealed a rapidly decaying picture of the text. It was not very accurate. In fact, his Debate reading contained more of Gould's argument than his attempt at an outline.

These protocols demonstrate some of the ways cognition plays an active and, I believe, important role in reading:

1. Readers construct multiple representations. Readers actively build a network of images, ideas and responses. Some readers appear to be building more than one interpretation and appear able to keep these readings quite distinct, at least for a time.

2. Some of these readings will be driven by the goal of locating and linking and remembering the (imputed) Author's Main Points. These readings have certain costs and benefits: they seem to require some effort to construct (e.g., one has to figure out what the main points are) and they require some rehearsal to remember. They are clearly vulnerable to decay and interference, but are useful if one wants to answer questions, learn someone else's position, or analyze that position. This sort of reading is also a necessary first step if one is wants to go beyond an outline, paraphrase or theme to build a fuller, authorially relevant image of the text.

3. Some readings seem to be driven by quite different goals and to acquire their sense of meaning and coherence by connecting the text to concepts supplied by the reader. These other readings are neither inherently better nor worse, but they <u>can</u> differ radically from each other, from a Main Point reading, and from an expanded authorially relevant reading.

4. Whatever their goals, these readers apportion a good deal of attention to building a representation based on those goals, to monitoring the progress of their representation, and to dealing with incongruities. Their negotiation with their own knowldge and the text is not a passive response to forces. Moreover, these points of active cognition, these sites of struggle with the text, are often connected to aspects of reading that theorists and teachers also find interesting: they involve those parts of the text that the readers find exciting or problematic; they help predict a person's success or failure in comprehending and using the text ; and they help us trace the path by which individual readers construct the texts they read and recall.

NOTES

1. I am deeply endebted in this paper to Gary Waller and Kathy McCormick for the opportunity to sit in on an exciting class they taught in critical theory. Their thinking about reading helped shape mine in many ways; it has stimulated me to friendly argument and encouraged all of us to explore the rich connections between cognitive and cultural theory.

REFERENCES

Anderson, J.R. 1980. Cognitive psychology and its implications. San Francisco: W.H. Freeman and Company.

Bartholomae, David. 1985. 'Inventing the university.' In M. Rose, ed., When a writer can't write: Studies in writer's block and other composing-process problems. New York: The Guilford Press.

Bartlett, F.C. 1932. Remembering: A study in experimental and social psychology. London: Cambridge University Press.

Bransford, John D. 1979. Human cognition: Learning, understanding and remembering. Belmont, CA.: Wadsworth Publishing Company.

Burke, Kenneth. 1950. A rhetoric of motives. Englewood Cliffs, NJ.: Prentice Hall.

Corbett, Edward P.J. 1971. Classical rhetoric for the modern student. New York: Oxford University Press.

Eagleton, Terry. 1983. Literary theory. Minneapolis, MN.: University of Minnesota Press.

Ericsson, K. Anders and H. Simon. 1980. Verbal reports as data. Psychological Review. 87(3): 215-251.

Fish, Stanley. 1980. Is there a text in this class? Cambridge, MA.: Harvard University Press.

Flower, Linda. (in prep.). Intentional structures in writing and reading. Center for the Study of Writing at Berkeley and Carnegie Mellon. Technical Report. Carnegie Mellon University.

Flower, Linda, J.R. Hayes, L. Carey, C. Haas and K. Schriver. 1986. Planning in writing: A theory of the cognitive process. O.N.R. Technical Report #1. Carnegie Mellon University.

Flower, Linda and J.R. Hayes. 1984. Images, plans, and prose: The representation of meaning in writing. Written Communication 1(1): 120-160.

Flower, Linda and J.R. Hayes. 1981. A cognitive process theory of writing. College Composition and Communication. 32 (Dec.): 365-387.

Foucault, Michel. 1977. 'What is an author?' In: Donald Bouchard, ed., Language, counter-memory, practice, pp. 113-138. Ithaca: Cornell University Press.

Frye, Northrop. 1957. Anatomy of criticism. Princeton, NJ.: Princeton University Press.

Gould, Stephen Jay. 1977. Ever since Darwin. New York: W.W. Norton.

Haas, Christina and L. Flower. Rhetorical reading strategies and the construction of meaning. Unpublished ms. Carnegie Mellon University.

Kinneavy, James. 1971. A theory of discourse. Englewood Cliffs, NJ.: Prentice Hall.

Kintsch, W. and D. Vipond. 1979. 'Reading comprehension and readability in educational practice and psychological theory.' In: L. Nilsson, ed., Perspectives on memory research. Hillsdale, NJ.: Erlbaum.

Langer, J.A. 1984. 'Effects of topic knowledge on the quality and coherence of informational writing.' In: A. Applebee, ed., Contexts for learning to write. Norwood, NJ.: Ablex.

Lindsay, Peter and D. Norman. 1972. Human information processing: An introduction to psychology. New York: Academic Press.

Schmidt, Siegfried. 1982. Foundations for the empirical study of literature. Trans. by Robert de Beaugrande. Hamburg, Germany: Buske.